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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,258	09/30/2003	Seung H. Kang	Ayukawa 1-4-1-162-30/0759	4017
29391	7590	02/04/2005	EXAMINER	
BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A. 390 NORTH ORANGE AVENUE SUITE 2500 ORLANDO, FL 32801			LE, THAO X	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/675,258

Applicant(s)

KANG ET AL.

Examiner

Thao X. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 17-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>01/09/04</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 1-16 in the reply filed on 03 Jan. 2005 is acknowledged. The traversal is on the ground that merely setting forth an alternative to one step does not prove that the product can be made by a materially different process. This is found not persuasive because the alternate method proposed by the Examiner would be distinct from the process claim. And Applicant has not provide a convincing argument that the materially different processes would not be suitable in producing the recited device. Finally, the search is not coexisting as evidenced by the different fields of search for the process and the product as cited in the restriction along with Office Action in Paper No.112004.

This requirement is deemed still proper and is therefore made FINAL.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Page 5 [0016] Figure 4 should read Figures 4 A-B. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The

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replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Figure 4 A-B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant Admitted Prior Art (APA).

Regarding claims 1, APA discloses an integrated circuit (IC) device comprising a multilevel metallization interconnect system, fig. 5 formed over a semiconductor substrate wherein the metallization system includes a bond pad level 156 and one or more underlying levels of interconnect, fig. 5, the bond pad level comprising: a plurality of contact pads 156 each configured for connection external to the device, specification [0029]; and an interconnect 146/142/132/130 configured to transfer power from one or more of the plurality of contact pad 156 to one or more of the underlying levels of interconnect 146/142/132/130, fig. 5.

Regarding claims 2 and 13, APA discloses the IC device wherein the material of the one or more levels of interconnect comprises copper specification page 7 [0029].

Regarding claims 3 and 14, APA discloses the IC device wherein the material of the bond pad level 156 comprises aluminum specification page 8 [0031].

Regarding claims 4-5, APA discloses the IC wherein the plurality of contact pads 156 are configured for connection external to the device by a bond wire 114 or solder bump 120, specification page 8 [0033] attached to one or more of the plurality of contact pads 156.

Regarding claim 6, APA discloses the IC wherein the material of the one or more levels of interconnect comprises copper and the material of the bond pad level comprises aluminum, further comprising a barrier material 155, specification page 8 [0031] in regions of physical contact between the copper 146 and the aluminum 156, fig. 5.

Regarding claims 7-9,15-16, APA discloses the IC device of further comprising one or more vias underling, fig. 5, and in electrical communication with the interconnect to transfer power from one or more of the pads 156 to one or more of the underlying levels of interconnect, fig. 5, wherein the one or more levels of interconnect further comprise substantially horizontal copper conductive runner 134 and substantially vertical conductive vias 130 interconnecting overlying and underlying copper conductive runner, fig. 5, specification page 7 [0029].

Regarding claims 10-11, APA discloses the IC further comprising a passivation layer 148, fig. 5, disposed between the bond pad level 156 and the one or more levels of interconnect 142 underlying the bond pad level 156, wherein the IC further comprises a passivation layer 160, fig. 5, overlying the bond pad 156 level, fig. 5.

Regarding claims 12, APA discloses an integrated circuit (IC) device comprising a multilevel metallization interconnect system, fig. 5 formed over a semiconductor substrate wherein the metallization system includes a bond pad level 156 and one or more underlying levels of interconnect, fig. 5, the bond pad level comprising: a plurality of contact pads 156 each configured for connection external to the device, specification [0029]; and an interconnect 146/142/132/130 structure configured to connect one more of the underlying levels of interconnect 146/142/132/130 to another of the one or more underlying levels of interconnect, fig. 5.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X. Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thao X. Le  
14 Jan. 2005

LONG PHAM  
PRIMARY EXAMINER